

A SIGNALING DEPENDENT ADAPTIVE ANALOG-TO-DIGITAL
CONVERTER (ADC) SYSTEM AND METHOD OF USING SAME

ABSTRACT OF THE DISCLOSURE

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An adaptive analog-to-digital converter (ADC) system (100) includes an automatic gain control (AGC) controller (101) for receiving both in-band and out-of-band signals from a radio frequency (RF) receiver and producing an AGC control signal therefrom. A digital signal processor (DSP) (103) is then used for interpreting the AGC control signal and providing an adjustment signal to an ADC (105). The ADC (105) uses the adjustment signal to dynamically control efficiency of the ADC system 100 by adjusting bit resolution, reference capacitance and bias based upon the RF signal received and desired protocol requirements presented to the AGC controller (101).